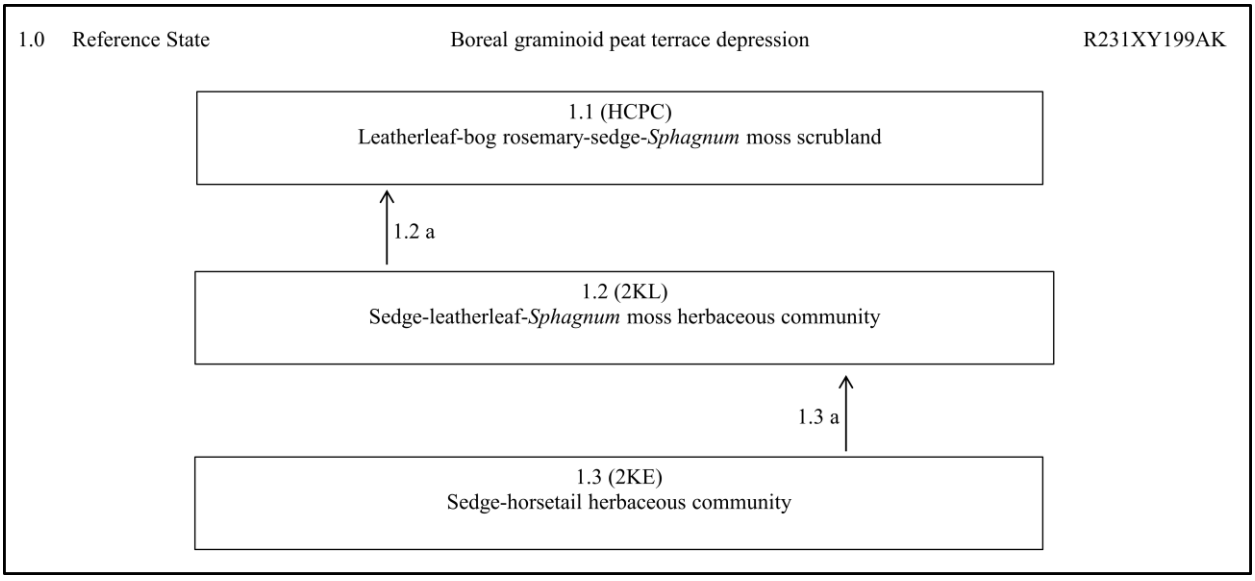
Ecological Site Description ID:	R231XY199AK

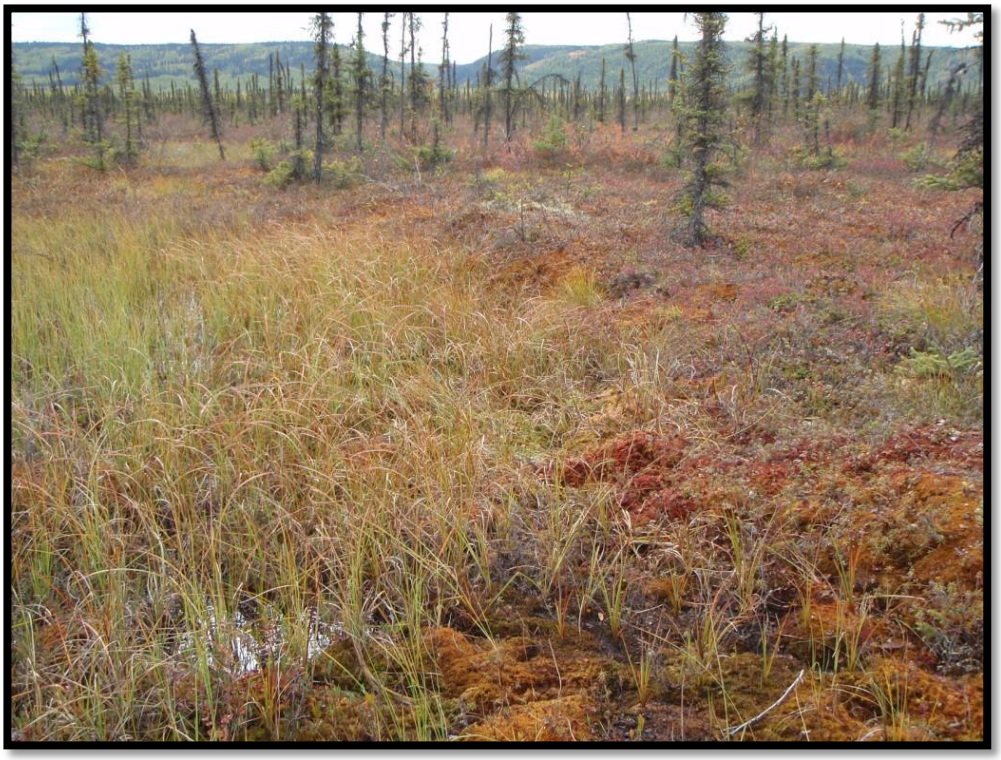
Ecological Dynamics of the Site:

This boreal ecological site occurred on spherical depressions of floodplain terraces and was attributed to a thermokarst event. In this ecological site, underlying permafrost melts, causing the ground to slump and form a wet depression. These wet depressions were considered stable open water bodies with little or no hydrologic input and, as a result, succession was considered similar to that of a bog. With time and organic matter accumulation, permafrost eventually reoccupies soil and sites progress from open water to scrubland. Prior to thermokarst, sites likely resemble ecological site R231XY169AK. Limited observations in lowland thermokarst made conceptualization of state and transition model difficult. It was believed that phases were an expression of time since thermokarst event, water table depth, accumulated organic matter, and presence/absence of permafrost. For community phase 1.1, soils were classified as cryofibrists and were composed of organic matter over silty alluvium.

State and Transition Diagram:



State ID Number:	1	State Name:	Reference
State Narrative:	Stunted and regenerative tree are defined to be less than 15’ in height. Medium shrubs are defined to grow 3-10’ in height, low shrubs are defined to grow 8” – 3’ in height, and dwarf shrubs are defined to grow less than 8” in height.		

Photo 1.1	

Community Phase Number:	1.1	Community Phase Name:	Leatherleaf-Bog Rosemary-Sedge-*Sphagnum* Moss Scrubland

Community Phase Narrative:

This community was thought to be the climax phase for this ecological site due to presence of stunted *Picea mariana,* dominance of ericaceous scrubs, and limited amount of standing water. *Picea mariana* was observed but at trace amounts in depressions. Shrubs primarily occurred in the low and dwarf stratums (total shrub cover ~30%). Commonly observed shrubs included *Chamaedaphne calyculata, Andromeda polifolia,* and *Vaccinium oxycoccos*. Graminoids were abundant (~95% cover) and were composed of an unknown *Carex sp*. Forbs and lichens were minor vegetative components. *Sphagnum* moss was an abundant ground cover. This phase had 2 observations.

Community Pathways

Pathway Number	Pathway Name & Description
1.1 a	With time and absence of thermokarst, climax phase may transition to ecosite R231XY169AK.

Photo 1.2	

Community Phase Number:	1.2	Community Phase Name:	Sedge-Leatherleaf-*Sphagnum* Moss Herbaceous Community

Community Phase Narrative:

This phase was characterized by abundant sedge and *Sphagnum* moss cover with a limited amount of ericaceous scrubs and standing water on the soil surface. Trees were not observed. Shrubs occurred in the low and dwarf stratum but had limited cover (~15% cover). The most common shrub species were *Chamaedaphne calyculata*, *Andromeda polifolia*, and *Vaccinium oxycoccos*. Graminoids were abundant (~30% cover) and cover was composed of *Eriophorum sp*., *Carex limosa*, and *Carex aquatilis*. Forbs and lichens were minor vegetative components. *Sphagnum* moss was an abundant ground cover (~90% cover). This phase had 2 observations.

Community Pathways	
Pathway Number	Pathway Name & Description
1.2 a	Normal time and growth. Organic matter increases. Ericaceous shrubs increase in cover and become a dominant vegetative component.

Photo 1.3	

Community Phase Number:	1.3	Community Phase Name:	Sedge-Horsetail Herbaceous Community

Community Phase Narrative:

This phase was characterized by an abundance of sedges, forbs, and standing water on soil surface. Trees were not observed. Shrubs were observed but were a minor vegetative component. Graminoids were abundant (~40% cover) and cover was composed of *Carex aquatilis*, *Carex microchaeta*, *Carex tenuiflora*, and *Eriophorum angustifolium*. Forbs were abundant (~10% cover) and cover was composed primarily of *Equisetum fluviatile*. This phase had one observation.

Community Pathways

Pathway Number	Pathway Name & Description
1.3 a	Normal time and growth. Organic matter accumulates and standing water on soil surface lessens. Cotton grass and horsetail species fall out of community, *Sphagnum* moss and ericaceous scrubs increase in cover.